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| PS2Win |
| Requirements Analysis Process |
| Keep Your Time |

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| Carla Machado  09-03-2013 |

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Table 1: List of Contributors

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Table 2: Version history

# Purpose

The purpose of the Requirements Analysis Process is the analysis and the detailing of client needs and requirements in order to be able to provide a system requirement specification.

The process also has the purpose of assuring that the customer needs and expectations are understood and the right solution is developed.

# Inputs and Outputs

In this chapter the inputs and outputs of the Requirements Analyzes Process will be described.

# Inputs

This process will be initiated by the opportunity of developing a software project.

The main inputs of the process will be the customer needs including any documentation and other forms of information provided by the customer and if possible users needs. One of the documents that should serve as an input of the process is the Vision & Scope.

Furthermore the input of the project team and any additional stakeholders should be taken into account.

# Outputs

The output of the process will be a word document specifying the system requirements, the System Requirements Specification, and also a number of complementary files such as the project files of the requirements management tool or use case tool.

# Activities

# Elicit Customer needs

The purpose of this activity will be the clarification of the customer needs as well as the gathering of information about the solution to develop.

In this stage there are a number of techniques that can be used. The choice of the ones that should be used must be made according to the specific needs of the project.

Some of the techniques that can be used are:

* Brainstorming;
* Questionnaires, interviews and scenarios;
* Prototypes and models;
* Use cases drafts;
* Workshops with the stakeholders;

The outputs of these activities will be used to the uses case definition and requirements specification.

One of the mandatory outputs of this activity are the Business Rules that should be registered in the project file of Enterprise Architect and follow the naming convention BR-Number.

# Define Assumptions and Restrains

The purpose of this activity is the definition of the project assumptions and restrains. These assumptions and restrains can be of a technical order or related to the business rules. In cases where the assumption or retrains origins in the business rules a connection must be made in the EA file to assure traceability.

The result of this activity will be registered in the project file of Enterprise Architect. Each assumption and restrain will be defined by a given name and description.

The naming of the items will follow the convention of ASS-Number for the assumptions and RST-Number for the restrains.

# Definition of use cases or user stories

The purpose of this activity is the definition of the uses cases and the possible scenarios. The use cases will provides a set of scenarios that convey how the system should interact with a human user or another system.

The use cases will be registered in the project file of Enterprise Architect. For each use case will be defined a name, a description the possible paths and if necessary the preconditions. Each use cases should be classified according to priority considering which ones the client considers more relevant.

Each use case must be related to the Business Rules or element that originated the use case.

# Specification of System Requirements

The purpose of this activity is the specification of the requirements. At this stage and as long as the requirements and System Requirements specifications aren’t baselined the requirements can be updated or deprecated without recourse to a formal process.

## Requirements Analysis

The requirements must be classified by type such as functional or performance or others and also given a level of priority and complexity. The scale to be used is:

* High
* Medium
* Low

How to calculate the priority?

The requirements priority attribution must be a result of the client’s concept of which functionalities are more important to the application. As for the complexity it must take into account the input of the development team in order to obtain an understanding of the level of difficulty of implementation.Furthermore each requirement must be SMART:

* Specific (scale 0-9)
* Measurable (scale 0-9)
* Attainable (scale 0-9)
* Realisable (scale 0-9)
* Traceable (scale 0-9)

**If there are requirements inconsistences and conflicting:**

**When conflicting requirements are detected the team alongside with the client must analyze the requirements and implications of the situation in other requirements or elements of the project in order to make a clarification or decision on what requirement should prevail.**

* **In situations in which a consensus couldn’t be reached the client’s point of view should take precedence.** …
  + 1. **Requirements Specification**

The requirements should be properly identified and categorized by ttype:

* functional requirements,
* non-functional requirements
* user requirements
* Other types.

The requirements will be registered in the project file of Enterprise Architect and related to the elements that originated the requirement.

The nomination of each requirement must be consistent through them all and must be accorded project by project.

The output of this activity is the exportation of the project file in Enterprise architect to a word document the Software Requirements Specification.

# Updating Requirements

Once the requirements and the SRS are baselined any change to them should follow a formal procedure.

???

# Deprecating Requirements

# Tools

The tools to be used in the activities of this process are a use case and a requirements management tool the Enterprise Architect. For documentation purposes Microsoft Office tools will be used.

# Related Processes

This process is related to the Document Management Process that should be followed when creating the Software Requirements Specification.

# Measures

Stability -> graph number of requirements/elements at each version

Measure of connectivity -> by requirement by range

Req1-> connected to x

Req2-> connected to y

or

X% of requirements are connected to y or [y-z]

% traceability ??

Each for requirement estimate:

* Benefit:
  + 1 useless;
  + 9 very important;
* Penalization:
  + 1 it has no impact;
  + 9 very serious consequences;
* Cost:
  + 1 very fast and easy;
  + 9 very slow and complex;
* Risk:
  + 1 it not exist;
  + 9 significant risks;